MESHKOV, V.K., inzh.; SOVALOV, S.A., kand. tekhn. nauk; GURINA, V.A., inzh.

Graph of the electrical load of the consolidated electric utility system of the European part of the U.S.S.R. Elek. sta. 34 no.10: 54-60 O '63. (MIRA 16:12)

MESHKOV, V.K., inzh.; SOVALOV, S.A., kand.tekhn.nauk; GURINA, V.A., inzh.

Coverage of peak power loads in the consolidated electric power system of the European part of the U.S.S.R. Elek. sta. 34 no.11:48-57 N '63. (MIRA 17:2)

GURINA, YE. G.

36219

GURINA, YE. G. I ROMANOV, G. N.
Motal'naya mashina MB-4. Tekstil. prom-st', 1949, No. 11, s. 37-38

SO: Letopis' Zhurnal'nykh Statey, No. 49, 1949

GURINA, Ye. I.

"Glutamine Metabolism in the Cerebrum of Animals at Rest and During Stimulation of the Central Nervous System." Cand Biol Sci, Chair of Biochemistry, Laboratory of Metabolism imeni Ye. S. London, Leningrad Order of Lenin State U imeni A. A. Zhdanov, Leningrad, 1955. (KL, No 12, Mar 55)

SO: Sum. No. 670, 29 Sep 55--Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (15)

BARYSHNIKOV, I.I.; GURINA, Ye.I.

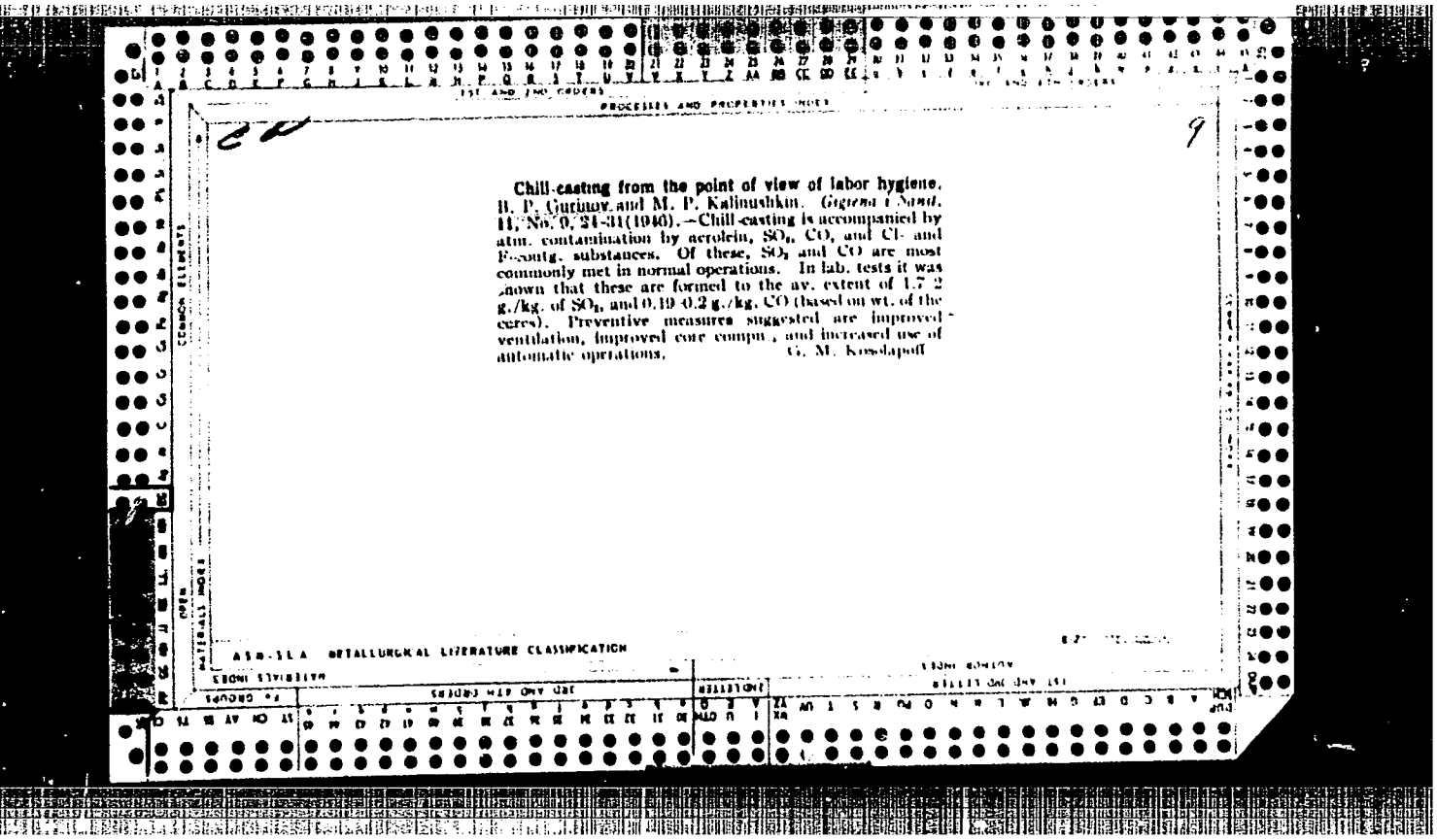
Pharmacology of 1,3-bis (trimethylammonium)-propane and of certain of its derivatives. Farm. i toks. 22 no.2:149-153 Mr-Ap '59. (MIRA 12:6)

1. Kafedra farmakologii (nach. - prof.S.Ya.Arbuzov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.
(PROPANE, rel. cpds.
1,3-bis(trimethylammonium)-propane & deriv., pharmacol. (Rus))
(AMMONIUM COMPOUNDS,
same)

POBEREZHNYY, V.; APOLLONOV, S.; GURINENKO, M.; ZOLOTAREV, B.

Welcome to the paper service huts. Okhr. truda i sots. strakh. 6 no.6:26-27 Je '63. (MIRA 16:8)

1. Vneshtatnyye tekhnicheskiye inspektora Moskovskogo gorodskogo soveta professional'nykh soyuzov (for Pobereznyy, Apollonov, Gurinenko). 2. Korrespondent zhurnala "Okhrana truda i sotsial'noye strakhovaniye" (for Zolotarev).



Chill-casting from the point of view of labor hygiene. B. P. Gurinov and M. P. Kalinushkin. *Gigiena i Sanit.* 11, No. 9, 31-31(1940).—Chill-casting is accompanied by atm. contamination by acrolein, SO_2, CO, and Cl- and F-containg. substances. Of these, SO_2 and CO are most commonly met in normal operations. In lab. tests it was known that these are formed to the av. extent of 1.7-2 g./kg. of SO_2, and 0.19-0.2 g./kg. CO (based on wt. of the cores). Preventive measures suggested are improved ventilation, improved core compn., and increased use of automatic operations. G. M. Kosolapoff

USSR/Medicine - Air Impurities Dec 48
Medicine - Industrial Hygiene

"Contamination of the Atmosphere by Enterprises Which Obtain and Refine High-Sulfur-Content Petroleum," B. P. Gurinov, F. I. Dubrovskaya, Cen Sci Res Sanitation Inst imeni Erisman, 5 pp

"Gig i San" No 12

Conducted experiments near "the Second Baku" and at oil fields in Bashkir. Sulfur contamination was worst up to altitudes of 30 feet (1 - 7 mg per cu m of air). Took samples at 0.5, 1, 1.5, 2, 2.5 and 3 kilometers from the factory or oil field.

57/49749

USSR/Medicine - Air Impurities (Contd) Dec 48

Determined that danger to workmen existed within a 2-km area and that housing should be outside this circle.

GURINOV, B. P.

57/49749

PA 65/49T60

USSR/Medicine - Air Purification
Industrial and
Occupational Hygiene
Jun 49

"All-Union Conference on Air Purification," B. P. Gurinov, 3 pp

"Gig i San" No 6

A joint session of the Conf on Plans and Subjects and the All-Union Conf on Air Purification was held in Moscow in Feb 49. One of the major problems discussed was the standardization of the content of harmful matter in air. Resolutions were based on reports of Professors Tomson, Gol'dberg,

65/49T60

USSR/Medicine - Air Purification (Contd) Jun 49

Gurinov, and Zhilin. Confirmed the value of new purification methods suggested by various institutes, and defects in their work. Recommended trends for future research.

65/49T60

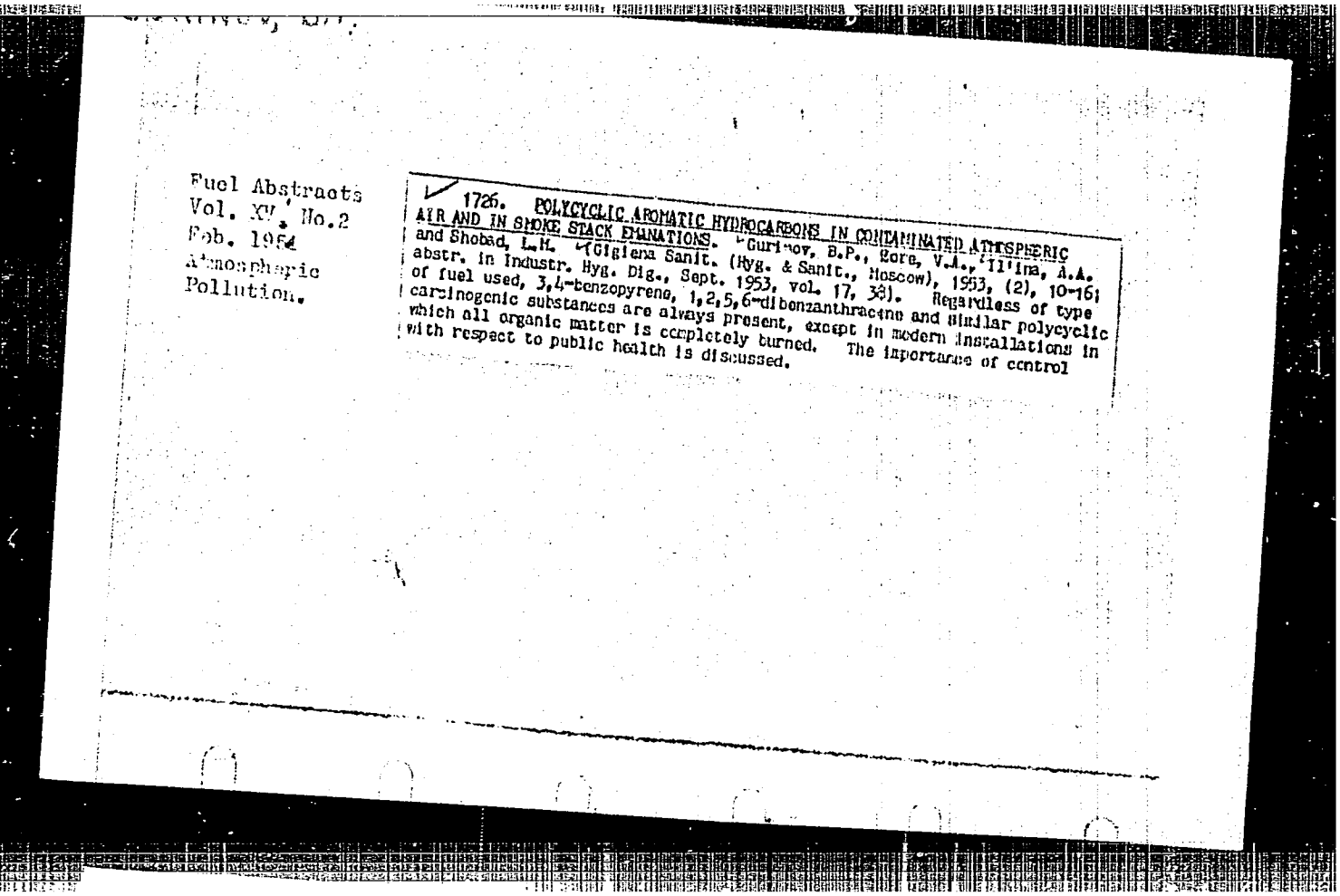
DERGACHEV, N.V.; GURINOV, B.P.

Characteristics of discharges from power stations and industrial boilers burning solid fuel. (In: Russia (1923- U.S.S.R.) Vsesoyuznaya gosudarstvennaya sanitarnaya inspektsiya. Ochistka promyshlennykh vybrosov v atmosferu. 1953. p. 54-69)

(MLRA 7:1)

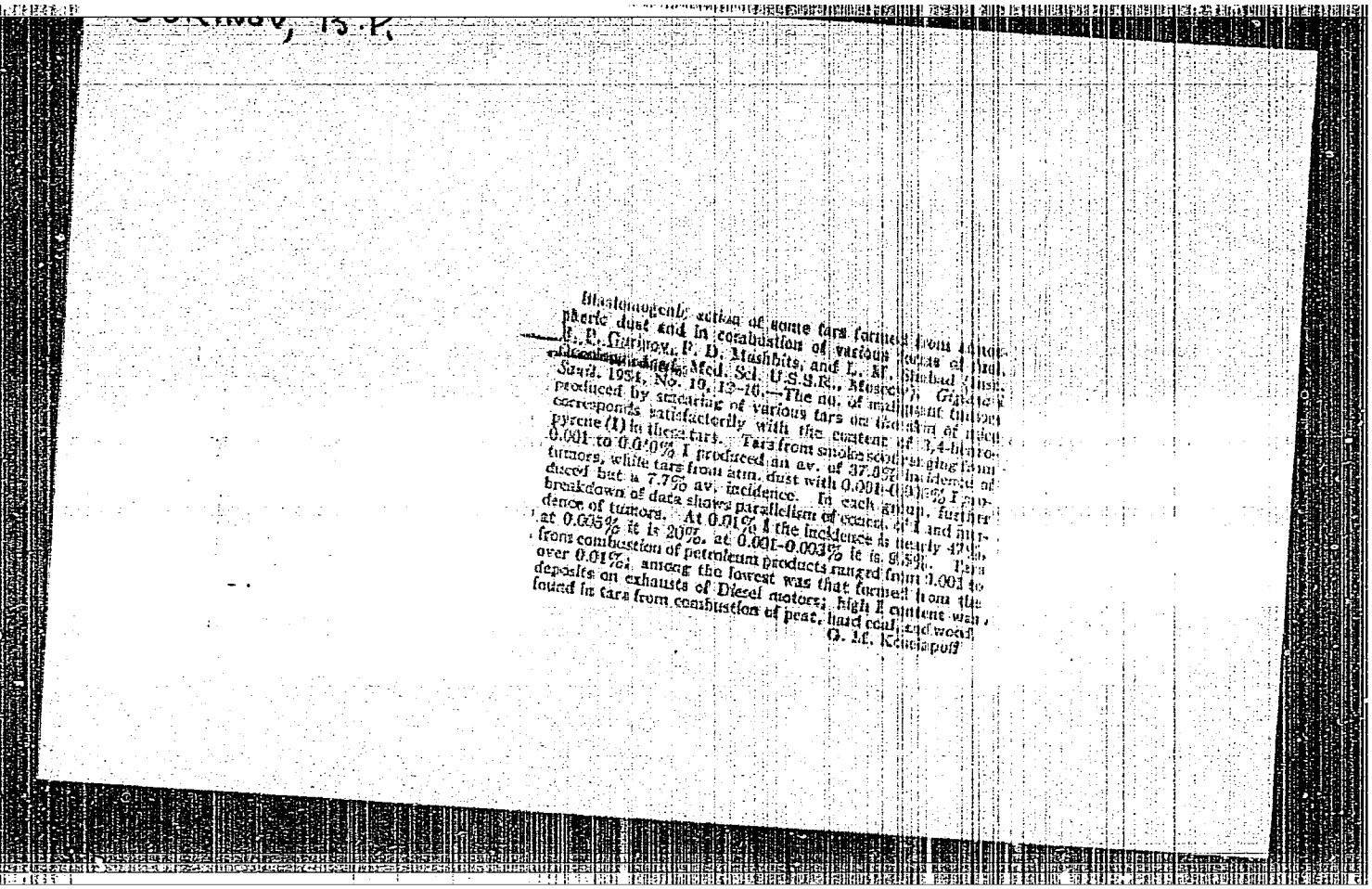
1. Tsentral'nyy nauchno-issledovatel'skiy sanitarnyy institut imeni F.F. Erismana.

(Air--Purification)



Fuel Abstracts
Vol. XV, No.2
Feb. 1954
Atmospheric
Pollution.

1726. POLYCYCLIC AROMATIC HYDROCARBONS IN CONTAMINATED ATMOSPHERIC AIR AND IN SMOKE STACK EMANATIONS. Gurinov, B.P., Gore, V.A., Ilina, A.A. and Shobad, L.M. (Gigiena Sanit. (Hyg. & Sanit., Moscow), 1953, (2), 10-16; abstr. in Industr. Hyg. Dig., Sept. 1953, vol. 17, 38). Regardless of type of fuel used, 3,4-benzopyrene, 1,2,5,6-dibenzanthracene and similar polycyclic carcinogenic substances are always present, except in modern installations in which all organic matter is completely burned. The importance of control with respect to public health is discussed.



Biochemical action of some tars formed from [illegible] pheric dust and in combustion of various [illegible] E. P. Garinov, P. D. Mashbits, and L. M. [illegible] Sanit. 1954, No. 19, 13–16.—The ca. of malignant tumors produced by smearing of various tars on the skin of mice corresponds satisfactorily with the content of 3,4-benzopyrene (I) in these tars. Tars from smoke soot ranging from 0.001 to 0.0'0% I produced an av. of 37.0% incidence of tumors, while tars from atm. dust with 0.001–0.0[illegible]% I produced but a 7.7% av. incidence. In each group, further breakdown of data shows parallelism of occurr. of I and incidence of tumors. At 0.01% I the incidence is nearly 47%, at 0.005% it is 20%, at 0.001–0.003% it is ca. 9.5%. Tars from combustion of petroleum products ranged from 0.001 to over 0.01%; among the lowest was that formed from the deposits on exhausts of Diesel motors; high I content was found in tars from combustion of peat, hard coal, and wood.

G. L. Kamalyan

GURINOV, B.P.

Maximum permissible concentration of arsenic compounds in the atmosphere in populated areas. Pred.dop.kontsent.atmosf.zagr. no.2:71-81 '55 (MIRA 10:11)

1. Iz Gosudarstvennogo tsentral'nogo nauchno-issledovatel'skogo sanitarnogo instituta imeni F.F.Erismana.
(AIR--POLLUTION) (ARSENIC COMPOUNDS)

GURINOV, B.P.

Effect of the combustion method and type of fuel on the 3,4 benzopyrene content of flue gases. Gig. i san. 23 no.12:6-9 D '58. (MIRA 12:1)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta sanitarii i gigiyeny imeni F.F. Erismana Ministerstva zdravookhraneniya RSFSR.
(BENZOPYRENE, determ.
in smoke gases, eff. of method of combustion & type of fuel (Rus))

GURINOV, B.P., kand.med.nauk; YANYSHEVA, N.Ya., kand.med.nauk

Data for substantiating sanitary protective zones and the degree of ash recovery for electric power stations operating on solid fuel. Gig. i san. 25 no. 12:3-10 D '60. (MIRA 14:2)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta sanitarii i gigiyeny imeni F.F. Erismana Ministerstva zdravookhraneniya RSFSR.

(SMOKE PREVENTION) (AIR--POLLUTION)

GURINOV, B.P.

Study of cancerogenic substances in the air in order to prevent cancer. Uch. zap. Mosk. nauch.-issl. inst. san. i gig. no.6:3-10 '60. (MIRA 14:11)

(CANCER RESEARCH) (AIR--POLLUTION)

GURINOV, I., pilot

Airplanes lead a caravan of ships. Grazhd.av. 18 no.10:18 O '61. (MIRA 15:5)

(Aeronautics, Commercial)

GURINOV, V.; SMETANKIN, S.; BARBANAKOV, V. (g.Taldy-Kurgan)

To the starting lines of our Spartakiada! Kryl.rod. 11 no.8:8 Ag '60. (MIRA 13:8)

1. Zamestitel' nachal'nika aerokluba po politicheskoy chasti, g.Bryansk.

(Aeronautics)

GURINOV, V.(Bryansk)

Training instrubtors of circles. Kryl.rod. 13 no.7:15 Jl '62.
(Briansk—Aeronautics—Competitions) (MIRA 16:2)

GOLOVANOV, N., zasluzhennyy master sporta; GURINOV, V.; VATLETSOV, V., obshchestvennyy instruktor (Kirov)

Facts, events, people. Kryl.rod. 14 no.7:32-33 Jl '63. (MIRA 16:9)

(Aerial sports)

GURINOV, Yu.S; GORBACHEV, S.V.

Effect of the velocity of electrolyte flow on the electrochemical kinetics at various activation energies of the electrode reaction. Zhur. fiz. khim. 37 no.5:1141-1143 My '63. (MIRA 17:1)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

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5.5700 2209, 1087, 1273

S/153/60/003/004/018/040/XX
B020/B054

AUTHORS: Gordiyevskiy, A. V., Gurinov, Yu. S.

TITLE: Desalting and Concentrating of a Sodium Chloride Solution With Low Salt Content by Means of Electroionites

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1960, Vol. 3, No. 4, pp. 653 - 656

TEXT: The authors studied heterogeneous ion-exchange membranes produced by the institute mentioned under "Association" under supervision by Ye. B. Trostyanskaya, I. P. Losev, and A. S. Tevlina (Refs. 1,2). The membranes were prepared from the anion-exchange resin ЭДЭ-10 (EDE-10) and the cation-exchange resins СДВ-3 (SDV-3) and СБС (SBS), whose content in the membranes varied from 40 to 70%. Synthetic rubber or chlorosulfonated polyethylene was used as a binder. Results of electrical-conductivity and selectivity determinations of the membranes showed (Table) that membraneson the basis of SDV-3 and EDE-10 resins had a higher electrical conductivity than SBS resins, and that this

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Desalting and Concentrating of a Sodium Chloride Solution With Low Salt Content by Means of Electroionites

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conductivity increased with the resin content of the membrane. By using a backing for the membranes, their electrical conductivity is reduced, but their selectivity increased. The table shows that the best cation-exchange membranes are the types "СДВ-3-65%-СК (SDV-3-65%-SK) with backing" and "СДВ-3-65%-ХСП (SDV-3-65%-KhSP) with backing", and the best anion-exchange membranes are the types ЭДЭ-10-65%-ХСП (EDE-10-65%-KhSP) which exhibited the highest selectivity and a high electrical conductivity. To investigate the processes mentioned in the title, the authors designed a multichamber flow cell of the laboratory type in which cation-exchange membranes of the type "SDV-3-65%-SK with backing" and anion-exchange membranes of the type "EDE-10-65%-KhSP with backing" were used. As initial solution, a 0.01 N NaCl solution was desalted and concentrated to a smaller volume. The selectivity of the membranes used is near the ideal one. Fig.1 shows the effect of current density on current yield. Fig.2 shows the dependence of current yield on the degree of desalting at different flow velocities in the desalting line. Fig.3 illustrates the dependence of current yield on the degree of desalting of the solution at different concentrations of the

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Desalting and Concentrating of a Sodium Chloride Solution With Low Salt Content by Means of Electroionites

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solution in the concentrating line. The concentration limit for a 0.01 N NaCl solution is 2 N NaCl. Figs. 2 and 3 show that the degree of desalting can be increased up to 80-90%. Under the most favorable conditions of desalting, the specific resistivity of the desalted solution can be brought to a value of $1.6 \cdot 10^5$ ohm.cm. There are 3 figures, 1 table, and 4 references: 3 Soviet and 1 US.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva, kafedra tekhnologii redkikh i radioaktivnykh elementov (Moscow Institute of Chemical Technology imeni D. I. Mendeleyev, Department of Rare and Radioactive Elements)

SUBMITTED: November 20, 1958

Card 3/3

GURINOV, Yu.E.; GORBACHEV, S.V.

Effect of the electrolyte flow within wide velocity range on the electrooxidation-electroreduction of the system $K_3[Fe(CN)_6]-K_4[Fe(CN)_6]$. Part 1. Zhur. fiz. khim. 38 no.9:2245-2250 S '64. (MIRA 17:12)

1. Khimiko-tekhnologicheskiy institut imeni Mendeleyeva, Moskva.

GORBACHEV, S.V.; GURINOV, Yu.S.

Effect of electrolyte stream in a wide range of velocities on the electrooxidation-electroreduction of the system $K_3[Fe(CN)_6]/K_4[Fe(CN)_6]$. Part 2. Zhur.fiz.khim. 39 no.7:1712-1718 Jl '65. (MIRA 18:8)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

GURINOVA, Ye.I.

Characteristics of the crystallization of rock-forming minerals in pillow lavas of the lower Tunguska Valley. Geol. i geofiz. no.8:58-72 '60. (MIRA 14:2)

1. Shestoye Glavnoye upravleniye Ministerstva geologii i okhrany nedr SSSR.
(Tungusha Valley—Minerals) (Crystallization)

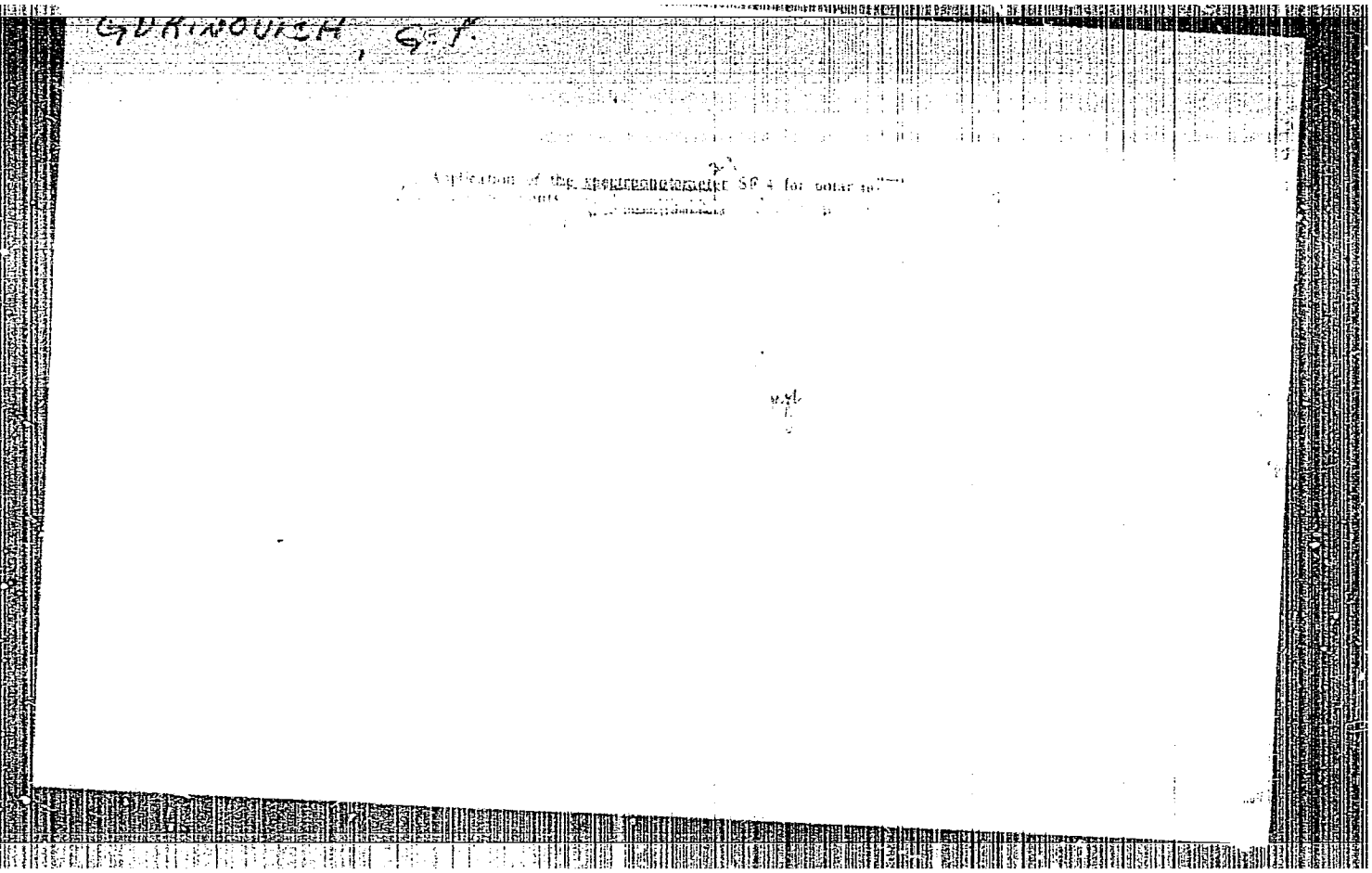
GURINOVA, Ye. I.

Geological conditions determining the formation of pillow lavas in the middle Lower Tunguska Valley. Izv. AN SSSR. Ser. geol. 24 no.6:94-105 Je '60. (MIRA 14:4)

1. Ministerstve geologii i okhrany nedr SSSR, Moskva.
(Lower Tunguska Valley—Lava)

Damping open [illegible] by means of hydraulic fracturing of impermeable rocks. Burenie no.3:27-29 '60.

1. Ukrainskiy [illegible]ol'nyy geologorazvedochnyy institut. (MIRA 13:6)



GURINOVICH, G. P.

16(1); 24(4,5) PHASE I BOOK EXPLOITATION SOV/1899

Akademiya nauk Belorusskoy SSR. Institut fiziki i matematiki

Trudy, vyp. 2. (Transactions of the Institute of Physics and Mathematics, Belorussian SSSR Academy of Sciences, Nr 2) Minsk, 1957. 283 p. Errata slip inserted. 750 copies printed.

Ed.: B. I. Stepanov, Academician, BSSR Academy of Sciences; Ed. of Publishing House: L. Marike; Tech. Ed.: I. Volokhanovich.

PURPOSE: This book is intended for mathematicians, physicists, and graduate students in mathematics and physics.

COVERAGE: This book contains a series of articles on recent contributions by members of the Institut fiziki i matematiki (Institute of Physics and Mathematics) of the Academy of Sciences, BSSR, in the fields of radiation, luminescence, optics, and spectroscopy and on the applications to physics of analysis, tensor analysis, linear groups, theory of adjustments, and differential equations. The

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first article contains a brief account of the work of the Institute, including names of scientists and mathematicians connected with it, facilities, scientific accomplishments, and fields of interest.

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AVAILABLE: Library of Congress (QC1. A46A3)

GURINOVICH, G.P.

PRIKHOT'KO, A.F.

24(7) P 3 PHASE I BOOK EXPLOITATION SOV/1365

L'vov. Universytet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii. t. 1: Molekulyarnaya spektroskopiya (Papers of the 10th All-Union Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy) [L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 4,000 copies printed. (Series: Its: Pixychnyy zbirnyk, vyp. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Jazer, S.L.; Tech. Ed.: Sararyuk, T.V.; Editorial Board: Landsberg, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabrikant, V.A., Doctor of Physical and Mathematical Sciences, Kornitskiy, V.G., Candidate of Technical Sciences, Rayskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Miliyanchuk, V.S., Candidate of Physical and Mathematical Sciences, and Olauberman, A. Ye., Candidate of Physical and Mathematical Sciences.

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51-3-6/14

AUTHORS: Gurinovich, G. P., Yermolenko, I. N., Sevchenko, A. N. and Solov'yev, K. N.

TITLE: Certain Optical Properties of Chlorophyll and Metal Derivatives of Pheophytin. (Nekotoryye opticheskiye svoystva khlorofilla i metalloproizvodnykh feofitina.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol.III, Nr.3, pp.237-245. (USSR)

ABSTRACT: Absorption and polarized luminescence spectra of chlorophyll, chlorophyllide, pheophytin and metal derivatives of pheophytin were studied. Chlorophyll was obtained from leaves of nettle. Chlorophyllide was produced by fermentation of Heracleum leaves. Pheophytin was prepared by a method described earlier (Refs.4, 5). Metal derivatives of pheophytin were produced by adding to an alcohol solution of pheophytin dry salts of metals (mainly acetates). These solutions were kept at room temperature for 20 hours and then heated at 50°C for 2 hours. Spectra of polarization of luminescence of the solutions of chlorophyll, chlorophyllide, pheophytin, and absorption spectra of the same three substances are

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Certain Optical Properties of Chlorophyll and Metal Derivatives of Pheophytin.

given in Fig.2. Figs.3 and 4 show absorption spectra of the solutions of pheophytin, silver pheophytinate, zinc pheophytinate (all in Fig.3) and pheophytinates of copper and cadmium (Fig.4). Fig.5 gives the spectra of polarization of luminescence of the solutions of pheophytinates of cobalt, nickel and zinc, as well as absorption spectra of the solutions of the same three substances. A hypothetical energy level scheme for a chlorophyll molecule is given in Fig.6. The authors conclude that in the substances studied each absorption band has its own electron transitions. The fundamental bands of absorption and emission are of dipole nature. Both the system of electron levels and probabilities of transitions between them are quite different in chlorophyll from those in the remaining substances studied. In particular essential differences occur between absorption and polarization spectra of pheophytin and chlorophyll respectively. On introduction of metallic atoms into the

Certain Optical Properties of Chlorophyll and Metal Derivatives of Pheophytin.

pheophytin molecule its structural characteristics become similar to those of chlorophyll. This seems to indicate that the structures of molecules of metal derivatives of pheophytin and of chlorophyll are similar. Luminescence yield of chlorophyll (Figs.7, 8, 9) and its derivatives was found to depend on viscosity of the solvent. With the increase of viscosity the luminescence yield decreases. The authors thank Professor T. N. Godnev for his interest and advice. There are 9 figures, 2 tables and 17 references, 11 of which are Slavic.

SUBMITTED: January 3, 1957.

AVAILABLE: Library of Congress

GURINOVICH, G.P.; YERMOLENKO, I.N.; SHEVCHENKO, A.N.; SOLOV'YEV, K.N.

Electron spectra of chlorophyll and metal derivatives of pheophytin. Fiz. sbor. no.3:375-381 '57. (MIRA 11:8)

1. Institut fiziki i matematiki AN Belorusskoy SSR.
(Chlorophyll--Spectra) (Pheophytins--Spectra)

20-117-5-19/54

AUTHORS: Sevchenko, A. N., Member of the Academy of Sciences of the Belorussian SSR, Gurinovich, G. P.

TITLE: The Determination of the Character of the Elementary Absorption and Radiation Oscillators With Non-Coinciding Directions (Opredeleniye prirody elementarnogo izluchatelya dlya nesovpadayushchikh po napravleniyu ostsillyatorov pogloshcheniya i izlucheniya).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 5, pp. 798 - 801 (USSR)

ABSTRACT: The investigations conducted here at various angles with respect to the direction of the exciting light and at various directions of the oscillations of the electric vector of the exciting light permitted the determination of the nature of the elementary processes of absorption and emission of light by matter. (references 1,2,3). This method is not only suited for the determination of oscillators which are directed parallel, but just as well of oscillators rotated through the angle α with respect to each other. At the beginning a formula for the degree of polarisation is given. The expressions obtained by extensive, however, elementary computations holding for the degree of polarisation (being the function of two angles) are given here for the following cases: Absorbing and emitting electric dipole. Electric dipol and electric quadrupole. Electric quadrupole and electric quadrupole.

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The Determination of the Character of the Elementary Absorption and Radiation Oscillators With Non-Coinciding Directions.

Magnetic dipole and magnetic dipole. Magnetic dipole and electric dipole. Electric dipole and magnetic dipole. Here the first mentioned oscillator refers to absorption and the last mentioned to emmission. This expressions are then simplified for specified angles. These formula permit the computation of the angles between the oscillators from the limiting polarisation. Previous to that, however, it seems necessary to determine the nature of the oscillator, which up to now has obviously never been done. This determination, however, is particularly valuable under certain circumstances. Some statements are made on the dependence of the modification of the degree of polarisation on the observaticnal conditions. The formulae given here permit the extended application of the method by S. I. Vavilov (reference 1),for the determination of the nature of the elementary oscillators, making use of the polarisation diagrams, on absorption oscillators and emission oscillators with different directions. As it is well known it is possible to draw unambiguous conclusions as to the multipole properties of the system only, if the limiting polarization exceeds 1/3. This limitation,however, does not hold in the case of absorbing ascillators, and it is possible to draw unambiguous conclusions on the nature of the oscillators in every case; It

The Determination of the Character of the Elementary Absorption and Radiation Oscillators With Non-Coinciding Directions.

appears useful to represent the formulae deduced here in a graphical form in their practical application. There are 1 figure, 6 references, 5 of which are Slavic.

SUBMITTED: July 18, 1957

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GURINOVICH, G.P.; PIKULIK, L.G.; SOLOV'YEV, L.N.

Sixth conference on luminiscence. Inzh.-fiz. zhur. no. 6:115-117 Je '58. (MIRA 11:7)

(Luminiscence)

GURINOVICH, G.P.; SAMSON, A.M.

The first republican scientific-technical conference on the application of methods of molecular spectrum analysis. Inzh.-fiz.zhur. no.7:120-121 Jl '58. (MIRA 11:8)
(Spectrum analysis)

GURINOVICH, G.P.; SARZHEVSKIY, A.M.

Photoelectric equipment for measurements of the polarization [with summary in English]. Inzh.-fiz.zhur. 1 no.8:59-64 Ag '58. (MIRA 11:8)

1.Institut fiziki i matematiki AN BSSR, Minsk.
(Photoelectric measurements) (Polarization (Light)--Measurement)

24(7)

AUTHORS: Gurinovich, G. P., Sevchenko, A. N. SOV/48-22-11-30/33

TITLE: Dependence of the Degree of Polarization Upon the Wavelength of Fluorescence (Zavisimost' stepeni polyarizatsii ot dliny volny fluorestsentsii)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958, Vol 22, Nr 11, pp 1407-1411 (USSR)

ABSTRACT: This is an experimental investigation of the polarization versus excitation- and luminescence wavelength function. The measurements were carried out with a device, the block scheme of which is portrayed in figure 1. In figure 2 curves describing the function in question are given for 3-monomethyl-amino-phthalimide in glycerin, which exhibits a well-pronounced mirror symmetry. The absorption- and emission spectra were obtained by L. G. Pikulik. It turns out that the polarization evidently decreases at a further departure from the frequency of the pure electron transition the rule of mirror symmetry and of polarization still being satisfactorily satisfied. Similar measurements were carried out with fluorescein and thiocyanide 6 (extra)(Tables 1, 2).

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The evidence presented in the tables offers a substantiation of theoretical considerations. As is known the theoretical value of polarization in isotropic solutions equals 1/2 . Experimental data for 3-mono-methyl-amino-phthalimide are given in table 3. It indicates that depolarizing factors can be found. If excitation is effected with light having the same frequency as that of the pure electron transition and the polarization is measured at the respective place, there are reasons to believe that even higher values of polarization may be obtained. This is, however, connected with certain experimental difficulties. The polarization versus the luminescence wavelength function was also investigated for dyes of a porphine type. The experiments showed a pronounced dependence, which is basically different from the analogous functions of other dyes. The experimental results presented are in good accordance to the measurements carried out with fluorescence spectra. The authors express their gratitude to T. N. Godnev for making available certain preparations. There are 5 figures, 3 tables, and 10 references, 7 of which are Soviet.

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617430008-2"

Dependence of the Degree of Polarization Upon the Wavelength of Fluorescence SOV/48-22-11-30/33

ASSOCIATION: Institut fiziki i matematiki AN BSSR
(Institute of Physics and Mathematics, AS Belorussian SSR)

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24(4)

AUTHORS: Sevchenko, A. N., Academician, Academy of Sciences Belorussian SSR, Gurinovich, G. P.

SOV/20-123-1-15/56

TITLE: The Polarization of Luminescence in the Case of Excitation by Polarized and Natural Light (Polyarizatsiya lyuminestsentsii pri vozbuzhdenii polyarizovannym i yestestvennym svetom)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 1, pp 60-63 (USSR)

ABSTRACT: The formula by V. L. Levshin and S. I. Vavilov: $P_n = P_p/(2-P_p)$ applies only to isotropic media and to the case in which absorption and emission are dipole-like. P_n and P_p respectively, denote the degree of polarization in the case of excitation by natural and polarized light respectively. The above formula was derived for observations at an angle of $\pi/2$ to the direction of the exciting light. For observations carried out at an angle $\chi \neq \pi/2$ it holds that

$$P_n = P_p(1 - \cos^2\chi)/(2 - P_p\sin^2\chi) .$$

However, all considerations in this paper concern the

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special case $\chi = \pi/2$. This paper deals with isotropic solutions for cubic crystals. Calculations are carried out for electric (e) and magnetic (m) dipoles, electric quadrupoles (q), as well as for electric (σ_e) and magnetic (σ_m) circular oscillators. It is known that the dependence of the degree of polarization of isotropic solutions on the angle η between the electric vector of the exciting light and the axis Oz varies for different multipoles. If the degree of polarization remains below 50%, this dependence is described in the special case $\chi = \pi/2$ by the formulae given in a table. The formulae for the various combinations of multipoles differ considerably from one another. In many cases these formulae are suited for the simple determination of the nature of the radiator by means of two measurements. The formula for the connection between the observed values of the degree of polarization of the excitation by natural and by polarized light are of special interest in the case of cubic crystals. For crystals, calculation is analogous to that for isotropic solutions. In this connection, calculations must be carried out for the following three special cases:

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1) The oscillators (of absorption and emission) are orientated parallel to the axes of the fourth order. 2) The oscillators are orientated parallel to the axes of the third order. 3) The oscillators are orientated parallel to the axes of the second order. Sometimes it is necessary to excite polarized luminescence by natural light with a certain admixture of polarized light. A formula is derived for dipole-like emission and absorption for the case in which the degree of polarization of the exciting light is known. There are 2 figures, 4 tables, and 7 references, 6 of which are Soviet.

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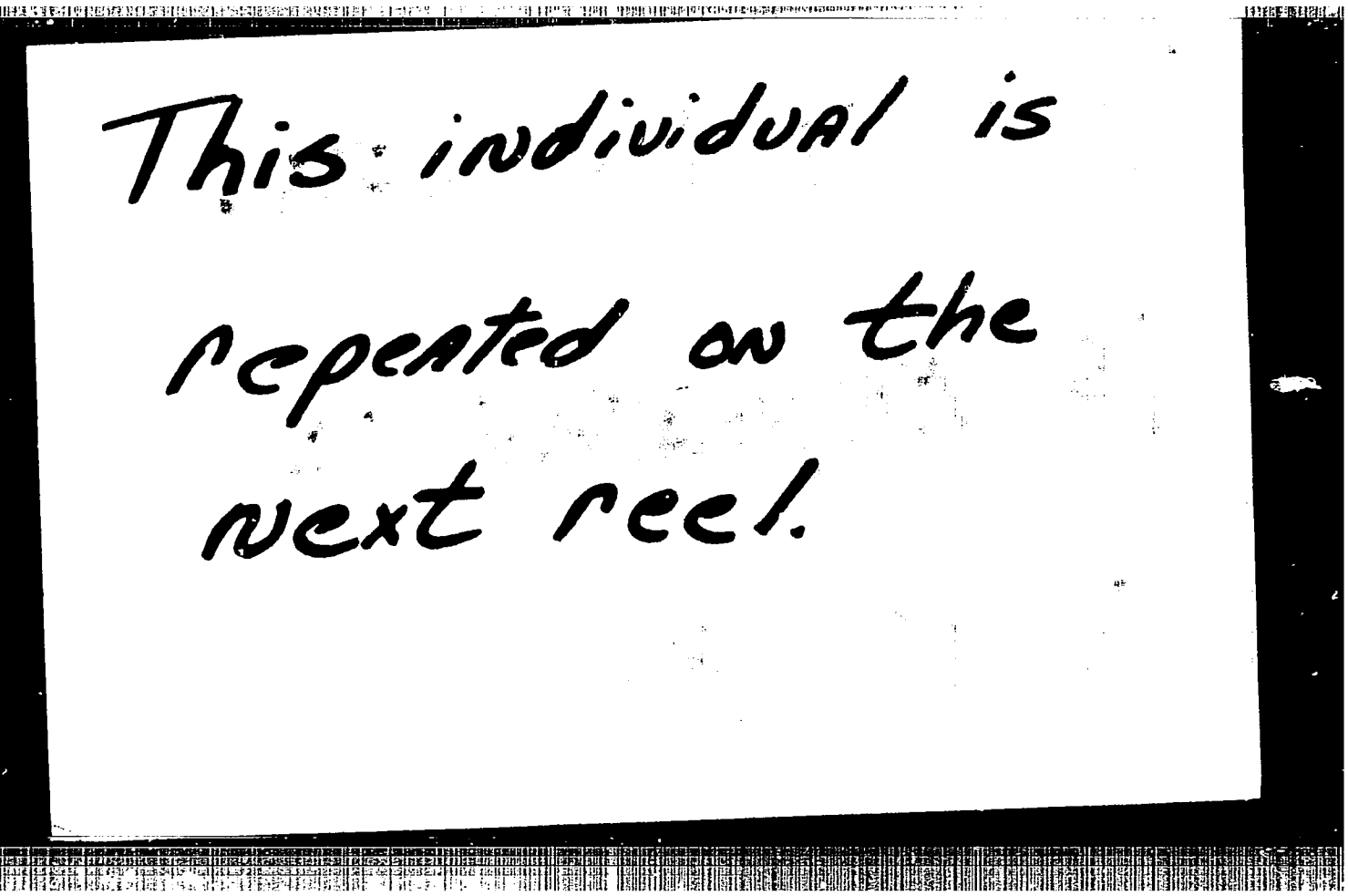

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